

Fixture with Adjustable Driver and Soft

Internal **Jaws.** —

The work *A* shown in Fig. 5 is made in three sizes, the largest of which is illustrated. These pieces have been previously bored and faced, and the flange holes have been drilled in a jig. The base *J* of the fixture is made of cast iron and is centered on the table by means of the plug *K*. It is held down by three screws *G* which enter shoes *H* in the table T-slots, and it should be noticed that the slots in the fixture permit the T-slots *L* to be moved inward to take care of work of smaller diameters. It is obvious that the screws *G* must either be moved inward when this is done, or else they can be placed at the extreme inner position and kept there at all times. The driving pin *E* is also arranged in a T-slot cut in the fixture, so that it can be moved radially to a position corresponding with the bolt holes; and the shoe *F* makes it secure in whatever position it may be placed.

Instead of using a locating ring, three soft jaws *B* are set in slots in the fixture base, and these may be clamped in place by means of the screws *C* which draw up on the shoes *D* in the T-slots. After clamping them in an approximately correct position, they are turned to the size of the interior of the casting. Attention is called to the fact that the outside portion of the hub in the base casting *J* is finished in order to facilitate calipering when turning the jaws. The clamps *N* are supported at their outer end by wooden blocks *O* and are drawn down on the flanged portion of the work by the nuts *M*. Radial adjustment of the clamps is obtained in the manner previously mentioned. The tools *Q* and *P* in the tool-holder *R* and the side head, respectively, are used for facing and turning the outside diameter of the work. Adjustments for diameters are obviously obtained by setting the machine slide. This fixture may be made up at little cost, is easily adjustable and will take care of a great range of sizes. In addition to this, the accuracy obtained by its use leaves nothing to be desired.

Adjustable Fixture for a Cast-iron Bracket. —

The work *A* shown in Fig. 6 is a cast-iron bracket which has previously been machined along the face *D* and has had the tongued por-